

BLOOMINGTON NORMAL COMMUNITY AIR RESEARCH AND EDUCATION (BN-CARE)

- Applicant: Ecology Action Center, PO Box 97, Normal, IL 61761
- Primary contact: Michael Brown, 309-454-3169 x.11, mbrown@ecologyactioncenter.org
- DUNS number: 836774794
- Set-Aside: community-based organization set-aside. The EAC serves the Bloomington-Normal and McLean County area in Central Illinois with a population of 170,954.
- Applicant Organization: The Ecology Action Center, a community-based 501(c)3 nonprofit organization, works to inspire and assist our community in creating, strengthening, and preserving a healthy environment. The EAC acts as a central resource for environmental education, information, outreach, and technical assistance in McLean County, Illinois. Ongoing programs include waste reduction and recycling, clean water protection, energy efficiency, and climate planning.
- Project Partners: Our partners in this project are Illinois State University, and Bloomington-Normal Chapter of the National Association for the Advancement of Colored People (NAACP). The primary contacts of our partners are Dr. LC Yang of Illinois State University, lyang@ilstu.edu, and Ms. Linda Foster of Bloomington-Normal NAACP, lafoste@ilstu.edu.
- Project Location and Air Pollutant Scope: We intend to quantify air pollutants within recognized Environmental Justice areas within McLean County including west Bloomington and north Normal. Air quality monitors will be used to measure ground-level ozone (O₃), nitrogen dioxide (NO₂), volatile organic compounds (VOCs), and particulate matter (PM_{2.5}).
- Project Period: The proposed project will start in October 2022 and end in September 2025, for a total of three years.

EPA Funding Requested	Total Project Cost
\$440,485	\$440,485*

* We will raise funding from local private donors and businesses to plant 7,000 trees.

- Project Description: The main objective of the project is to increase understanding of the relationship between local air quality and public health and build partnerships towards collaborative efforts to improve air quality. This will be achieved using air quality monitoring devices, community engagement in monitoring activities, workshops, and tree planting projects, outreach through real-time air quality data sharing and educational programs, and sharing of project findings with public officials, project partners, community organizations, and through media outlets.

Workplan

Section 1 – Project Summary and Approach

A. Overall Project

The Ecology Action Center (EAC), sub-recipient Illinois State University (ISU), and partners plan to create a community ambient air quality monitoring program to promote environmental equity for the environmental justice (EJ) areas in Bloomington-Normal. The plan has four components: (1) install air quality monitors within the identified EJ areas to measure PM_{2.5}, ozone, NO₂, and VOCs; (2) analyze and share measured data with community members and local agencies; (3) build a foundation of trusting relationship among community members through training, workshops, educational programs, and discussions; and (4) work with community members and local agencies to control air emissions, reduce exposure to air pollutants, and increase awareness of air quality and health effects. The team (BN-CARE team) has a history of successful efforts raising funds from local private donors and businesses to plant trees in Bloomington-Normal to improve the air quality.

Air quality monitoring. The team plans to purchase three reliable stationary air quality monitors and eight portable air quality monitors for this project. The three stationary air quality monitors will be installed within the identified EJ areas for long-term measurement of PM_{2.5}, ozone, NO₂, and VOCs. As shown in Fig. 1, two will be installed in southwest Bloomington, and one will be installed in northwest Normal. These areas have been identified as EJ communities using data from the EPA EJ Screen Environmental Justice Screening and Mapping Tool. The eight portable air quality monitors with changeable PM_{2.5}, ozone, NO₂, and VOCs modules (two modules/monitors for each air pollutant) will be used for short-term measurement at hot spots and for training and education.

Data sharing. Data sharing is a critical component of this project. Data generated from monitoring activities will be uploaded to a new dedicated website for local air quality at BNcare.org and shared with all community partners and members who are interested in knowing near real-time local air quality. The website will be promoted through the EAC and ISU websites as well as local media outlets and social media. The team will present the monitoring results to local community organizations including the City of Bloomington, Town of Normal, and McLean County Health Department. Team members will also present the project outcomes at state and nationwide conferences.

Trust building. The team understands the importance of trust building among community members, partner organizations, and entities contributing to emissions. The team has communicated with a few local emission sources to hear their perspectives and concerns and to build a foundation in order to work together on this project. In addition, the team has surveyed residents in EJ areas to gather preliminary perceptions of air quality issues. Activities we propose include: (1)

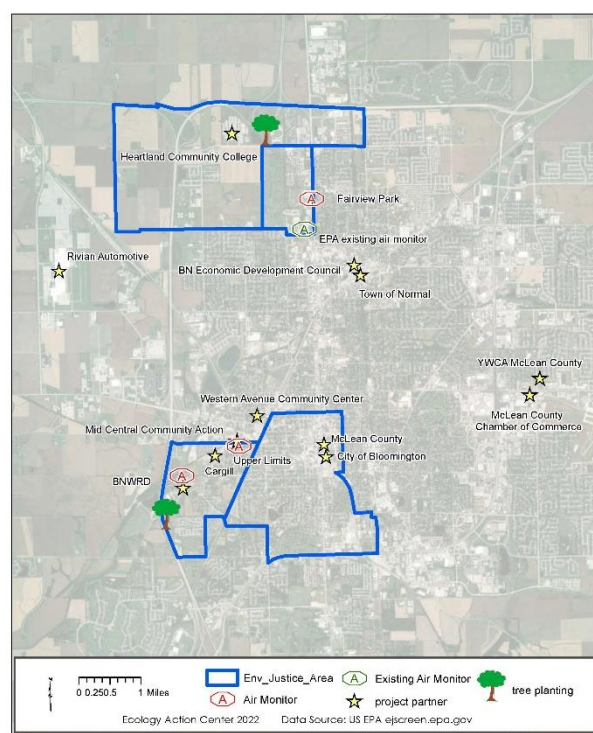


Figure 1. Location of air quality monitors

Training community members to measure air quality. After completing training, community members can use the portable monitors to measure air quality at a location of their choice. (2) Organizing workshops and developing educational programs to educate community members, college students, and K-12 students on air quality and related health effects. (3) Creating dialogs with local emission sources to develop potential emission control strategies.

Air quality improvements. The ultimate goal of this project is improve air quality, reduce exposure to air pollution, and improve awareness of air pollution and related health effects. The team will report project outcomes to local agencies and make recommendations on policy changes and actions such as installing air quality warning signs in Bloomington-Normal. The team will plant trees in EJ community areas. Funding for the tree planting projects will be raised by the team through private and/or other public sources. The team successfully planted over 10,000 trees in 2021. Several community partners have already committed to supporting the EJ areas tree planting project over the next three years (See for example support letters from Heartland Community College and Bloomington Normal Water Reclamation District).

Increasing air quality monitoring capacity in Bloomington-Normal is necessary to better capture data relative to disproportionate exposure to environmental impacts on the residents living in our community's EJ areas. It is only with this data that residents can learn and come together to identify avenues for environmental health improvement. **Currently there is only one air quality monitoring site (AQS Site ID: 17-113-2003) in Bloomington-Normal, and it is not located in an EJ area.** Air pollution can vary widely within communities. Adding stationary air quality monitors to our EJ areas, and adding additional opportunities through mobile units, will help accurately measure pollution in underserved areas, which in turn will support local action to find solutions to the air pollution causes and opportunities to mitigate the risks from exposure.

B. Project Significance

According to the Centers for Disease Control and Prevention (2019a; 2022), poor air quality can exacerbate asthma, chronic obstructive pulmonary disease (COPD) and heart disease with ground level ozone and particle pollution threatening public health. According to the McLean County Community Health Assessment (2016), the leading cause of death for McLean County residents from 2013-2017 was heart disease with acute and chronic respiratory diseases ranking third (15.5% of deaths). The impacts from poor air quality are vast and can interrupt the number of days children attend school as children with asthma are likely to miss almost 2.5 more days of school than their peers without asthma adding up to almost 14 million days of school per year (CDC, 2015; McLean County Health Department, 2016; U.S. EPA, 2021a). There are two elementary schools located in the west Bloomington EJ area. Asthma and COPD can incur immense health care costs in the billions of dollars as well (U.S. EPA, 2021a).

McLean County has received grades from the American Lung Association of a "B" for ozone air quality (2014-2016) and a "B" rating for particle air pollution (2010-2012) (American Lung Association, 2010-2012; American Lung Association 2014-2016; McLean County Health Department, 2019). The McLean County Ozone rating is an increase from a "D" in 2011-2013 (McLean County Health Department, 2019). **However, as identified in Section 1, the only air quality monitor in McLean County is located 2-3 miles away from the EJ areas in west Bloomington.** Therefore, the Bloomington-Normal community in McLean County does not have an inclusive and transparent picture of the air quality in the community. This project will provide that information, so that the extent of the problem is clear and actionable.

The McLean County Health Department includes air quality findings as part of their environmental health portion of the community health assessment. Because the most recent assessment finished in fall 2021, the time frame of this project provides a perfect opportunity to include more specific data in 2024 assessments. The data will help identify any potential air quality issues not gleaned from the lone permanent monitor located in the north part of Normal, Illinois.

This project will have broad impacts on EJ communities in Bloomington-Normal. **It is estimated 35,000 people will get access to near real time location-specific air quality data, 300 people will receive trainings on air quality monitoring, and 500 people will attend workshops and educational programs.** Community-wide, residents will gain greater understanding of disproportionate impacts of air pollution through participation in tree planting projects in the EJ areas.

During the initial planning stage of this project in March 2022, the EAC administered a survey for community non-profits and local organizations in west Bloomington. **We received first-hand testimonials about the concerns among the community regarding air quality**, for example about the industry facilities located in west Bloomington, interstate traffic emissions, and landfill emissions. There was also an indication that **residents were interested in learning more about air quality and how to interpret data from an air quality monitor**. During a meeting with the Environment and Climate Justice Committee of the Bloomington Normal Chapter of the NAACP, there were also **concerns expressed about chronic odors in West Bloomington potentially created by air pollution**.

The twin cities of Bloomington and Normal have a long history of successful partnerships for a wide range of critical programs and services; this is not unique to local government but to successful initiatives in all sectors of the community. **The development of this proposal has revealed to the team that this community is perfectly poised to work collaboratively on the issue of improving air quality.**

Section 2 – Community Involvement

A. Community Partnerships

This project collaborates with community partners at multiple levels. The stakeholders of this project include Bloomington-Normal NAACP, Illinois State University (Department of Health Sciences, Center for Civic Engagement, Office of Sustainability), McLean County, City of Bloomington, Town of Normal, Bloomington-Normal Water Reclamation District, McLean County Regional Planning Commission, Cargill, Rivian Automotive, YWCA McLean County, Western Avenue Community Center, McLean County Chamber of Commerce, Bloomington-Normal Economic Development Council, Mid Central Community Action, Heartland Head Start, Heartland Community College, and Unit 5 Normal Community High School Geography Department and Environmental Sciences.

Roles for the above partners include the following

Project Planners: The EAC, ISU, and the Bloomington-Normal NAACP are involved in important decision-making aspects of the project as well as any/all project updates/outcomes, policy changes, installation of air quality warning systems, and with tree plantings.

Stakeholders: Project stakeholders include McLean County, City of Bloomington, Town of Normal, Mid Central Community Action, and McLean County Chamber of Commerce. The project planners will be communicating important and relevant findings to all stakeholders.

Industry Partners: Cargill and Rivian Automotive are large industries in the community. They have been called into this project as partners to provide project results regarding air quality emissions in the community and how that links to their own emissions and air quality outcomes/standards. There is potential to work with other larger industry-partners as well.

Stationary Air Quality Sites/Partners: The sites for stationary air quality monitoring and data collection include at a local pre-school, Bloomington-Normal Water Reclamation District (BNWRD), and a community college, representing multiple locations in the west Bloomington and Normal community. The sites for the air quality monitors include two placements west Bloomington EJ area and one placement in the north Normal as shown in Figure 1. These partners will provide a location for the monitors throughout the duration of the project.

Educational Partners for Data Exploration/Workshops: Unit 5 Normal Community High School Geography Department and Environmental Sciences, ISU Office of Sustainability, ISU Center for Civic Engagement, Heartland Head Start, Heartland Community College, YWCA McLean County, Western Avenue Community Center. At Unit 5 Community High School, faculty plan to incorporate air quality data collection and exploration of this data in classroom activities. Heartland Head Start and Heartland Community College are not only sites for the stationary air quality monitors, but also partners for any educational workshops regarding the findings of the project as well as for usage of any data for projects (at the community college). The ISU Office of Sustainability will assist with providing awareness about the project and with community engagement. The Center for Civic Engagement will also assist with long-term outcomes for addressing any policy and community engagement needs. Other community partners include local schools (K-12) and the institutions of higher education (ISU, Heartland Community College, and Illinois Wesleyan) to develop at least three educational programs for students. These programs can include presenting air quality data outcomes, providing students labs and other activities for using the data, and opportunities for addressing any adverse air quality issues. The YWCA McLean County and Western Avenue Community Center serve to represent the EJ communities as well as underserved residents of McLean County. We will partner with them to present key findings, host workshops, and hear from residents regarding their on-going concerns. We hope to engage residents for civic engagement activities related to air quality. We will also work with all educational partners to assist with awareness and recruitment for community members to participate in the portable air quality monitoring.

B. Community Engagement

Data Collection and Sharing

Stationary Air Quality Monitors. Data collection will occur for three years after the installation of the air quality monitors with daily reporting of air quality measures available to the project team and also to all partners with access to the monitors and data recording website. Alerts of poor air quality will be sent to subscribers automatically.

Portable Air Quality Monitors. Residents from EJ communities will be invited to participate in the project by nominating their neighborhood for measuring outdoor air quality. Participants will be recruited via four ways: 1) as constituents/members of the partners/organizations of the stationary monitors who live in the Bloomington-Normal Community 2) through advertising the project in local news sources, 3) through information supplied by our educational partners, and 4) through the EAC. All individuals who will be using air quality monitoring devices will attend a training with the team.

Educators from multiple local institutions will integrate air monitoring projects and/or data analysis exercises into their courses. Normal Community High School, Heartland Community College (HCC), Illinois Wesleyan University, and ISU are all anticipated to participate in this way. HCC faculty is interested in using the portable air quality monitors coupled with existing water quality monitoring on an annual basis.

Tree Equity Pollution Sinks

It is well established that urban trees and shrubs help remove air pollutants including O₃, PM₁₀, NO₂, SO₂, and CO. But it is critical that "tree equity" is considered in the planning of tree projects to site the pollution sinks where they are most needed to alleviate disproportionate impacts of air pollution. The team will utilize the already evolving community air quality partnership to create tree-planting projects within the two EJ areas. Planting efforts will begin in 2022 and will repeat annually for the duration of the project including backfilling areas where there may be tree mortality. Over three years an estimated 7,000 trees will be planted at Heartland Community College in north Normal and at the Bloomington Normal Water Reclamation District in west Bloomington. The calculated benefits of these trees are shown below in Table 1, utilizing the i-Tree Planting tool developed by the US Forest Service and others. Calculations were made assuming a 99+ year lifespan for the tree projects with a 25% mortality rate and based upon the air pollutant removal qualities of a mix of common native hardwood trees found in central Illinois.

Table 1. Planned tree project and estimated lifetime environmental benefits

Site	unit	area (acres)	trees	CO ₂ sequestered (pounds)	O ₃ removed (pounds)	NO ₂ removed (pounds)	SO ₂ removed (pounds)	PM _{2.5} removed (pounds)
HCC	A	6.9	2988	37,448,829	202,108	30,377	6,412	17,464
HCC	B	3.6	1578	19,538,519	105,448	15,849	3,345	9,112
HCC	C	0.7	303	3,799,157	20,504	3,082	651	1,772
BNWRD	A	1.1	496	5,970,103	32,220	4,843	1,022	2,784
BNWRD	B	0.4	171	2,170,947	11,716	1,761	372	1,012
BNWRD	C	0.7	298	3,799,157	20,504	3,082	651	1,772
BNWRD	D	1.5	642	8,141,050	43,937	6,604	1,394	3,797
BNWRD	E	0.5	231	2,713,683	14,646	2,201	465	1,266
BNWRD	F	0.4	194	2,170,947	11,716	1,761	372	1,012
Totals		15.8	6901	85,752,391	462,798	69,558	14,683	39,990
Annual average				866,186	4,675	703	148	404

EPA funds will NOT be utilized for tree planting projects; these will be paid for in their entirety through fundraising of private donations, sponsorships, and utilization of volunteer labor. Building upon practices developed in 2021 as the first year of the EAC's Tree Corps initiative, "Tree Teams" will be used for collaborative fundraising and as a labor source for planting workdays.

Air Quality Reporting

The priorities of this project are not only to measure the air quality in the Bloomington-Normal community, but to also engage the community with transparent data collection and air quality reporting. As part of the "right to know ethics," participants and collection site partners are providing their time, home/organization space, and energy and therefore should be privy to project data and outcomes (Brody et al., 2007; NASEM, 2018; Schollaert et al., 2021). Providing opportunities for transparent reporting and explaining of project results is essential in working with community partners (Schollaert et al. 2021). Using multiple methods and processes for explaining the results of

air quality measures is also an important step to “limit complexity and maximize interpretability” (Schollaert et al., 2021). Newsletters with continuous updates will be provided every three months to community partners and stakeholders. Newsletters will contain reports from all air quality monitoring sites as well as sites where data collection occurred with the portable devices. This project will incorporate 5+ workshops/meetings to explain community findings.

Project Evaluation Measures with the Community

At all aspects of the project, evaluation measures will be conducted involving the community partners and stakeholders. Before any data is collected, IRB approval will be sought from the Illinois State University IRB. Evaluation measures that are varied, transparent, and using multiple points of collection are the recommended practice (Schollaert et al., 2021) and are outlined below:

1. Survey Questionnaires
 - a. At the beginning stages of the project (March 2022), surveys sent by the Ecology Action Center to community non-profits and local organizations in west Bloomington to identify their initial concerns regarding air quality in the region
 - b. Community partners at air quality monitoring site locations every 6 months for project quality assurance and questions
 - c. All individuals involved in requesting a portable air quality monitoring meeting
2. Qualitative Practices
 - a. Observations for all meetings (including meetings for air quality monitoring)
 - b. Feedback discussion related to larger meetings and community gatherings
 - c. Open-door policies of feedback via phone, email, and through newsletter for constant feedback and project questions from Bloomington-Normal residents

Long-term Community Engagement

Following the Health in All Policies (HiAP) approach, this project will engage community partners to pursue next steps to address any potential air quality issues. Started by the World Health Organization, HiAP explores the potential health impacts of policies and environmental outcomes (CDC, 2016; Ron et al., 2021). HiAP provides important links to health and any future governmental policies that are enacted (Puska & Ståhl, 2010; Ollilia, 2011; CDC, 2016, Gugliemin, Muntaner, O’Campo, & Shankardass, 2018; Ron et al., 2021). Specifically, this project will use a HiAP method called, Health Lens Analysis (HLA) to bring together multiple stakeholders and partners (Department of Health, 2011; Ron et al., 2021). Using the HLA steps of engage, gather evidence, generate, navigate, and evaluate, the steps will be integrated into all stages of the project from community partner meetings and data collection to outcomes. We are developing vision and purpose for the project, a commitment to activities with capacity building and impact assessments, reporting and monitoring of the air quality, and collaborative work with all partners (Stevenson & Brinsdon, 2017). Examples are listed below:

Engage: Work and build capacity with community partners in the endeavor of measuring the air quality in west Bloomington and northwest Normal.

Gather evidence: Using stationary and portable air quality monitors, BN-CARE will collect emissions levels of ground-level ozone (O₃), nitrous oxides (NO_x), particulate matter (PM_{2.5}), and volatile organic compounds (VOCs) to determine the overall air quality in northwest Normal and west Bloomington.

Generate outcomes: throughout the project, data will be available via the BN-CARE's website and via the monitoring systems at each stationary site.

Navigate: Working with our partners, BN-CARE will develop activities and policies based on the findings/needs of the project. Specifically, we will mobilize our partners for action necessary to

address any air quality issues.

Evaluate: We will integrate impact assessments for the addition of any new activities/policies based on project outcomes including tree plantings and air quality warning systems.

Longer-term project outcomes will focus on communicating with the City of Bloomington and Town of Normal to make policy changes and take actions such as installing air quality warning signs and also supporting tree-planting efforts to reduce air pollutant impacts. We will submit project outcome reports to local authorities and potential industries in the community regarding any potential pollutants emitted. ISU's Center for Civic Engagement and Office of Sustainability will be important partners for these outcomes.

C. Community-Based Organization Set-Aside

The EAC is a non-profit environmental organization with a mission to inspire and assist our community in creating, strengthening, and preserving a healthy environment. EAC acts as a central resource for environmental education, information, outreach, and technical assistance in McLean County, Illinois. For over 50 years, EAC has engaged residents throughout McLean County on waste reduction and recycling, protecting clean water, increasing energy efficiency, and adopting renewable energy. McLean County, Town of Normal, and City of Bloomington contract EAC to meet a variety of technical service and community education needs around these environmental topics. The EAC also contracts with other agencies, and pursues other grant opportunities to expand program offerings.

Most recently, Elevate Energy contracted the EAC to serve as a grassroots educator for the Illinois Solar for All program. This program aims to increase access to solar for low-income residents and non-profits and public facilities that provide critical service to underserved communities. Eligible solar projects in Elevate Energy designated EJ areas are more likely to be approved. To ensure underserved residents are reached, and EJ area projects are submitted and approved, the EAC has worked extensively with community partners like the YWCA, Western Avenue, Mid-Central Community Action, Habitat for Humanity, and the West Bloomington Revitalization Project to reach eligible residents. Elevate renewed the EAC's funding for three years due to demonstrated community engagement success.

Section 3 – EJ and Underserved Communities

Environmental pollutants are not uniformly distributed in communities. Socioeconomic factors affecting access to healthy food, affordable healthcare, and safe housing decrease opportunities to combat the negative effects of environmental degradation and pollution exposure. Decades of inequitable policies also resulted in a higher likelihood that low-income and minority populations often reside in areas with higher levels of pollution. Data from the EPA EJ Screen Tool shows that PM2.5 and Ozone levels in Bloomington-Normal as a whole are in the 70-80 percentile range. However, when socioeconomic indicators like minority and low-income populations are taken into account, PM2.5 and Ozone are pushed into the 80-90 percentile range in parts of southwest Bloomington and northwest Normal. EJ Screen also shows a Low Life Expectancy of 50-60 percentile in northwest Normal. Worse, the entirety of the identified EJ area in southwest Bloomington is at or above 80-90 percentile low life expectancy, with the upper left corner of the designated area at 95-100 percentile. Low income and unemployment rates in the EJ areas are above 80-90 percentile.

Through the addition of new air quality monitors in northwest Normal and southwest Bloomington the team hopes to paint a quantitative picture of environmental inequity in our community. Since air pollution data alone will not address EJ issues, the team is incorporating a variety of community

engagement initiatives. The goal is to ensure that EJ community residents have the information they need to take action, to educate the wider community about the environmental disparities within the community, and to impact future decisions to reduce emissions and increase mitigation opportunities within the EJ areas and the community at large.

Section 4 – Environmental Results—Outcomes, Outputs and Performance Measures

A. Expected Project Outputs and Outcomes

Project outputs and action items are shown in Table 2. Details of the proposed actions are described in Sections 1 and 2.

Table 2. Project Outputs and action items

Outputs	Action items
Deployment of three stationary and three portable monitors to conduct air quality monitoring in EJ communities	Monitor PM2.5, ozone, and VOCs in EJ areas for both long-term and short-term Train 10+ community members and 6+ students on air quality monitoring
Near real-time air quality data availability for 100+ individuals, 10+ community organizations, one health department, three schools, and other stakeholders	Publicize the project to community members Share results via dedicated webpage at BNcare.org Send alerts to subscribers for high AQI events
Promotion of partnerships and community involvement through workshops, trainings, educational programs, meetings, and other activities	Provide 5+ workshops to community members Develop 3+ educational programs with schools Communicate with 5+ emission source entities Plant 6,901 trees to reduce air pollutants (funded locally) Communicate with city to install air quality warning signs
Reports and conference presentations	Submit annual reports and a final report to EPA Submit project outcome reports to local authorities Present the project at two nationwide conferences

The expected project outcomes are shown in Table 3.

Table 3. Expected Project Outcomes

Short term	Intermediate	Long-term
Generation of air quality data at EJ areas. Identification of air quality problems, patterns, and exposures among community members. Increased awareness of air quality and health effects Increased community access to air quality information and air quality monitoring tools Increased communication with emission source entities.	Community plant 6,901 trees to mitigate air pollutants (local funding) City places air quality warning signs and takes other actions determined by residents.	Removal of PM2.5 (404 pounds annually), O ₃ (4,675 pounds annually), NO ₂ (703 pounds annually), and SO ₂ (703 pounds annually). Reduction of human exposure to PM2.5 and ozone

B. Performance Measures and Plan

Our team will meet monthly to track activities, measure performances, and solve any problems. The two organizations (EAC and ISU) have collaborated on many projects in the past. Likewise, our team members have established strong communication, demonstrating readiness for this project. Regular meetings and tight project integration will allow us to achieve our project goals. Performance measures include quality of the measured air quality data, number of community and student participants, number of trainings, workshops, and educational programs, number of reports and conference presentations, and survey of community members.

C. Timeline and Milestones

The proposed project will start in October 2022 and end in September 2025, for a total of three years. The long-term air quality monitoring using the stationary monitors will start in January 2023 and

continue even after the project ends. Specific tasks and milestones are shown in Table 4.

Table 4. Timeline and Milestones

Timeline and Milestones	2022			2023									2024									2025															
	Month >	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
Task 1 Air quality monitoring																																					
Equipment bidding																																					
Equipment procurement																																					
Stationary equipment installation																																					
Long-term monitoring																																					
Short-term monitoring (portable)																																					
Equipment maintenance																																					
Data analysis																																					
Task 2 Community engagement																																					
Data sharing with community																																					
Training of community partners																																					
Community partner led monitoring																																					
Educational programs																																					
Tree Planting Projects																																					
Task 3 Dissemination/education																																					
Website publication																																					
Workshops/local presentations																																					
State/nationwide conferences																																					
Newsletter																																					
Student training																																					
Reports																																					

Section 5 – Quality Assurance Statement

See the Appendix- Quality Assurance Statement.

Section 6 – Programmatic Capability and Past Performance

A. Past Performance

Agreement # 1: Dr. Yang is a Co-PI of an ongoing USDA project (USDA-NLGCA 2020-70001-31279, \$149,986) titled “Research and education capacity building for anaerobic digestion of agricultural wastes.” This is a three-year project, started in fall 2020. Although the pandemic and supply chain issues were challenging, Dr. Yang and his collaborator managed to overcome the difficulties and are on track to complete the project deliverables on time.

Agreement # 2: Dr. Yang is a PI of the research project “Test the filtration efficiency of N95 masks recovered using an electrostatic charging device” sponsored by a private company. This project started in 2020 and successfully completed in 2021 with all objectives achieved.

Agreement # 3: Dr. Wodika was a co-PI on a project “Qualitative Study Exploring Impacts of Food Insecurity Among College Students.” The project was funded in 2020. Working as a team, we guided the student research over the course of two years, collected qualitative data, and assisted the student researcher in all phases of project development. All were conducted during the COVID-19 pandemic and were successfully able to complete the project and provide outcomes to local food pantries, boards, and local/national presentations.

EAC does not have assistance agreements falling within the last three years. However, EAC had one EPA project for seven years, from 2010 through 2017. See section 6.C for details.

B. Reporting Requirements

Agreement # 1: The first project year financial report and annual report have been submitted timely in 2021. No deficiencies noted on these two reports.

Agreement # 2: The final technical report was submitted timely in 2021. No deficiencies noted.

Agreement # 3: The final report was submitted to the Office of Student Research in May 2021 which included a final proposal and expense report. No deficiencies were noted.

C. Staff Expertise

Michael Brown has 14 years of experience in his current role as Executive Director of the EAC. Responsibilities include management of all fiscal operations, development and coordination of environmental initiatives, public relations and outreach, partnership development, and quarterly and annual reporting for funders and stakeholders. Program Coordinator Riley Francis has over four years' experience in data collection and interpretation and work as a non-traditional educator. Her previous experience includes strategic planning, greenhouse gas inventory reporting for both non-profit and for-profit organizations, and B-Corp reporting. She is skilled in taking complex technical messages and translating for general audiences in an engaging manner. The most recent independent financial audit for the EAC indicated no deficiencies; no management letter was issued.

While no assistance agreements exist in the past three years, EAC applied for and received funding from the Illinois Emergency Management Agency through the EPA State Indoor Radon Grant program for seven years, from 2010 through 2017. The annual award averaged approximately \$17,000. EAC fully complied with all reporting and other grant requirements and was notified of no deficiencies with that program. Other relevant experience include small grants from the Illinois Prairie Community Foundation in 2014 and 2018 again, with full compliance of all requirements and no deficiencies noted. EAC has long-standing service contracts with local governments agencies and State of Illinois initiatives. While these do not qualify as "assistance agreements", we have a very long track record of meeting all contractual obligations and reporting requirements.

Section 7 – Budget

A. Budget Detail

Line Item & Itemized Cost	EPA Funding
Personnel	
(1) Project Manager @ \$45/hr x 6.23 hrs/wk x 156 wks	\$43,735.00
(2) Project Staff @ \$20/hr x 14.3 hrs/wk x 156 wks	\$44,616.00
TOTAL PERSONNEL	\$88,351.00
Fringe Benefits	
Project Manager @ 9.4% of salary - Retirement, FICA, UI	\$4,111.09
Project Staff @ 17.3% of salary - Health Benefits, FICA, UI	\$7,718.57
TOTAL FRINGE BENEFITS	\$11,829.66
Travel	
Mileage for PM: 5.48 mi/wk @ \$.585/mi x 156 wks	\$500.10
Mileage for Staff: 5.487 mi/wk @ \$.585/mi x 156 wks	\$500.10
TOTAL TRAVEL	\$1,000.20
Equipment	
3 - stationary air monitors w/ modules, solar, data, website integration @ \$67,676/unit	\$203,028.00
TOTAL EQUIPMENT	\$203,028.00
Supplies	

8- mobile air monitors @ \$1,500/unit	\$12,000.00
Equipment insurance @ \$4000/yr x 3 yrs	\$12,000.00
website and outreach @ \$3000/yr x 3 yrs	\$9,000.00
workshop supplies @ \$2000/yr x 3 yrs	\$6,000.00
TOTAL SUPPLIES	\$39,000.00
Other	
Subaward Costs	\$80,758.00
TOTAL OTHER	\$80,758.00
Indirect Charges	
MTDC	\$165,180.86
TOTAL INDIRECT	\$16,518.09
TOTAL FUNDING	\$440,484.94
Indirect = 10% x modified total direct costs (includes only first \$25,000 of subaward)	

* The team will raise funding for the tree planting project from external sources.

Subaward ISU Budget Table and Description

Line Item & Itemized Cost	EPA Funding
Personnel	
(1) PI Yang @0.5 moth/yr: \$4,239 (Yr1)+ \$4,324(Yr2)+ \$4,410 (Yr3) = \$12,973	\$12,973
(2) PI Wodika @0.5 moth/yr: \$3,762 (Yr1)+ \$3,837 (Yr2)+ \$3,913 (Yr3) = \$11,512	\$11,512
(3) Two undergrad student workers @ \$15/hr× 10 hr/wk × 30 wk/yr × 3 yrs= \$13,500	\$13,500
Total Personnel	\$37,985
Fringe Benefits 34.5% of Salary and Wages =\$13,125	\$13,125
Travel	
2024 Conference: 825 (registration)+125*3(lodging)+500 (air fare)+32*4(Per Diem)	1,629
2025 Conference: 546 (registration) +125*3(lodging)+580 (airfare) +32*4 (per diem)	1,828
Total Travel	3,994
Total Direct Cost	\$54,566
Indirect Cost 48% of the Total Direct Cost	\$26,192
Total Costs	\$80,758

B. Reasonableness of Costs

These personal costs are reasonable because the Ecology Action Center and Illinois State University pays the PIs at the same rate for activities that are not federally funded, and the salaries are consistent with the market rates for professionals in environmental and ecological health/education sciences fields. The student worker costs are based on the university policies. The air monitor costs are based on quotes we received for this project for the most appropriate equipment at the most reasonable cost. Website work is done in-house with minimal costs for hosting, domain registration, and functional plugins. Outreach is done using existing traditional media relationships and existing social media platforms at best rates we have been able to obtain. The travel costs are calculated based on the transportation, lodging, and registration costs. See details in the two budget tables.

C. Expenditure of Awarded Funds

Project Manager will provide fiscal management to ensure appropriate and efficient usage of all grant funds consistent with this proposal. Fiscal oversight will be provided by the EAC Board of Directors in compliance with all internal policies and controls. Independent financial audits are conducted annually.

Section 8 – Optional Attachments

The following documents are attached to this proposal: (1) Appendix- Quality Assurance Statement, (2) Appendix- References, (3) Appendix- Community set-aside, and (4) Appendix- Support letters.